

## **CLAIMS**

### **We claim:**

1    1.    A mobile communications method that comprises:  
2            receiving a message from a wireless communication network ("serving  
3            network") indicating that a mobile communication device user has  
4            requested registration at the serving network;  
5            storing in a database an indication that the mobile communication device  
6            user is registered in the serving network;  
7            determining whether the mobile communication device user should be  
8            registered in only one network; and  
9            in response to determining that the mobile communication device user  
10           should be registered in only one network, sending a message to a  
11           wireless communication network where the mobile communication  
12           device user was previously registered ("previous network") that the  
13           mobile communication device user is no longer registered at the  
14           previous network.

1    2.    The method of claim 1, further comprising:  
2            receiving a routing number request message from a home wireless  
3            communications network ("home network");  
4            retrieving from the database an indication that the mobile communication  
5            device user is registered in the serving network;  
6            sending a routing number request to the serving network in accordance  
7            with a serving network protocol;  
8            receiving from the serving network a routing number; and  
9            sending the routing number to the home network in accordance with a  
10           home network protocol.

1    3.    The method of claim 2, wherein the home network protocol is different than  
2    the serving network protocol, and wherein the method further comprises:  
3            translating a routing number message from the serving network protocol to  
4            the home network protocol.

1 4. A mobile communications provision method in a mobile communications  
2 system having at least two wireless networks with different mobile switching  
3 center ("MSC") communication protocols, the MSCs in each wireless network  
4 being coupled to a universal location service register (ULSR) having a database  
5 of information about all subscribers registered in one or more of the wireless  
6 networks, wherein the method comprises:

7 tracking for each registered subscriber in the database at least one MSC  
8 where that registered subscriber is registered ("a serving MSC");  
9 receiving a routing number request associated with a registered  
10 subscriber; and  
11 providing a routing number in response to the routing number request.

1 5. The method of claim 4, wherein said providing a routing number includes:  
2 determining a serving MSC for the registered subscriber associated with  
3 the routing number request;  
4 sending a routing number request to the serving MSC; and  
5 receiving a routing number from the serving MSC.

1 6. The method of claim 5, wherein said determining a serving MSC includes:  
2 selecting a serving MSC from a plurality of serving MSCs where the  
3 registered subscriber is simultaneously registered.

1 7. The method of claim 6, wherein said selecting includes:  
2 determining a preferred serving MSC from a user profile associated with  
3 the registered subscriber.

1 8. The method of claim 5, wherein said sending a routing number request  
2 includes:  
3 translating the routing number request into a MSC communications  
4 protocol associated with the serving MSC.

1 9. A mobile communications provision method in a mobile communications  
2 system having at least two wireless networks with different mobile switching  
3 center ("MSC") communication protocols, the MSCs in each wireless network  
4 being coupled to a universal location service register (ULSR) having a database  
5 of information about all subscribers registered in one or more of the wireless  
6 networks, wherein the method comprises:

7 receiving from a MSC a registration request associated with a subscriber;  
8 retrieving a user profile for the subscriber;  
9 refusing the registration request if the user profile indicates that the  
10 subscriber is not authorized to register with the MSC; and  
11 sending the user profile to the MSC if the user profile indicates that the  
12 subscriber is authorized to register with the MSC.

1 10. The method of claim 9, further comprising:  
2 if the user profile indicates that the subscriber is authorized to register with  
3 the MSC, updating the database to indicate that the subscriber is  
4 registered with the MSC.

1 11. The method of claim 9, further comprising:  
2 determining whether the subscriber can be concurrently registered in  
3 multiple networks; and  
4 issuing a registration cancellation to any other MSCs where the subscriber  
5 is registered if the subscriber cannot be concurrently registered in  
6 multiple networks.

1 12. A mobile communications system that comprises:  
2 a set of wireless networks each having at least one mobile switching  
3 center ("MSC"), wherein at least one wireless network in the set  
4 employs a MSC communication protocol that differs from a MSC  
5 communication protocol employed by at least one other wireless  
6 network in the set;

7 a universal location service register ("ULSR") coupled to the MSCs in each  
8 wireless network of the set, the ULSR including:  
9 a database of information about all subscribers registered in  
10 one or more of the wireless networks in the set.

1 13. The system of claim 12, wherein the ULSR is configured to track for each  
2 said subscriber at least one MSC where that subscriber is  
3 registered ("a serving MSC").

1 14. The system of claim 13, wherein the ULSR is further configured to:  
2 receive a routing number request associated with a subscriber;  
3 determine a serving MSC for the subscriber associated with the routing  
4 number request;  
5 send a routing number request to the serving MSC;  
6 receive a routing number from the serving MSC; and  
7 provide the routing number in response to the original routing number  
8 request.

1 15. The system of claim 14, wherein as part of determining a serving MSC, the  
2 ULSR is configured to select a serving MSC from a plurality of  
3 serving MSCs where the registered subscriber is concurrently  
4 registered.

1 16. The system of claim 14, wherein the ULSR is further configured to  
2 translate the routing number request between different MSC  
3 communication protocols.

1 17. The system of claim 12, wherein the ULSR is configured to:  
2 receive from a MSC a registration request associated with a subscriber;  
3 retrieve a user profile for the subscriber;

4        refuse the registration request if the user profile indicates that the  
5                subscriber is not authorized to register with the requesting MSC;  
6                and  
7        send the user profile to the requesting MSC if the user profile indicates that  
8                the subscriber is authorized to register with the requesting MSC.

1    18.    The system of claim 17, wherein the ULSR is further configured to update  
2                the database to indicate that the subscriber is registered with the  
3                requesting MSC.

1    19.    The system of claim 17, wherein the ULSR is further configured to:  
2                determine whether the subscriber can be concurrently registered in  
3                multiple networks; and  
4                issue a registration cancellation to any MSCs (other than the requesting  
5                MSC) where the subscriber is registered if the subscriber cannot be  
6                concurrently registered in multiple networks.